Kihapai Street Traffic Calming Evaluation

Project Description

The Kihapai Traffic Calming improvements were completed June, 2002. This street is located in a residential area, generally known as Coconut Grove, which has experienced increased volumes since the completion of H-3 Freeway. Many people, hoping to avoid the traffic signals, buses and general congestion of Oneawa Street, use Kihapai as a by-pass to get to Kailua town center area. Too often, they are speeding as well. The project purposes were to:

- Reduce cut-through traffic by motorists using Kihapai to avoid Oneawa.
- Reduce speeding. Before project implementation, speeds were measured between 32-37 mph along Kihapai Street.

The traffic calming devices installed included:

- 1 Chicane
- 6 Bulbouts
- 3 Medians
- 4 Speed Tables

A mini map is attached as Exhibit A.

While Kihapai was one of the early areas addressed in the citywide traffic calming program, it was not the first, even in this area of Kailua. Speed humps, have been installed in many other streets. Public forums on traffic are common and traffic calming was not unknown to residents.

Nevertheless, this particular design did incorporate features not seen elsewhere, most notably the chicane, which caused concern almost from the moment it was installed. Some people complained about getting flat tires after hitting devices. Early adjustments were made to remove a bulbout at a driveway, which the owner/renter found extremely difficult to navigate with her business truck. The DTS received many calls and letters about this street.

Evaluation

A one-year evaluation was conducted in three parts:

1. Volume changes
2. Speed changes
3. Public survey

A. Volume Analysis

Volume studies were taken at three locations on Kihapai Street, and one location on Kaha Street. See Table 1. At every location, traffic volumes were reduced by 9-24 percent. This suggests that the traffic calming devices have succeeded in their goal of reducing cut-through traffic.

B. Speed Analysis

Speed studies were taken at the same locations as the volume studies. See Table 1 and Figure 1. Speeds were reduced by 5-9 mph at Kaipii Street section location, 6-7 mph at Kahoa Drive section, 5 mph at Kawainui Street. Kaha Streeet had reductions of 3-4 mph.

These are significant changes. The variations may be due to differences in the type of devices installed at each location.

Again, the speed analysis shows that while the devices did not fully reach the official speed limit of 25 mph for a residential street, they came a long way closer to that goal. These findings confirm that some type of traffic calming will be essential to keep speeds reduced.

C. Resident Survey

In April 2003, approximately one year after the installation of the traffic calming devices on Kihapai Street, 625 survey forms were mailed to all residential addresses (see attached survey form). Occupants were asked questions regarding their perception of the effectiveness of the devices. A stamped return mail envelope was provided to encourage responses. We received 216 responses (a 1 in 3 return rate). Seven (7) responses were returned by the post office marked "vacant."

The survey was done in two groupings:

1. 455 questionnaires were mailed to residents on Kihapai Street and the dead end streets off of Kihapai Street. We received 160 surveys (a 1 in 3 return rate) from this group.
2. 163 questionnaires were subsequently mailed to residents on side streets that connect Kihapai to Oneawa Streets. This mailing covered residents on the side street that lived between Kihapai Street to halfway up the side street. We received 56 surveys (also a 1 in 3 return rate) from this group.

   The resulting responses from both survey groups were statistically identical (+/-5%), and thus were combined for all further analysis.

   The survey asked seven questions and provided space for open-ended comments.

Table 2 is a breakdown of responses on a base of 625 (all surveys sent out).
Table 3 is a breakdown of responses for only those 216 who replied.

For question one, most people felt the features could be seen. Those who didn't, found it more a problem at night and recommended yellow painting. Many preferred speed humps to the bulbouts. Some would have preferred sidewalks.

For question two, of those responding, most did not notice less traffic. This is interesting because it was contrary to the actual finding. Likewise, most did not experience a decrease in noise. Those responding did not feel the changes were safer for pedestrians or bicyclists.
These responses are consistent with those who did not feel the features outweigh the inconvenience. Loss of parking and competition for parking were among the greatest concerns.

Two-thirds of respondents chose to provide additional comments, suggesting they have strong feelings about the project both positive or negative. However, it must be noted that two-thirds of all those sent a survey form did not respond at all. It is fair to say that many of them were neutral to the project, at least not moved enough to respond.

Recommendation

Several recommendations are made:

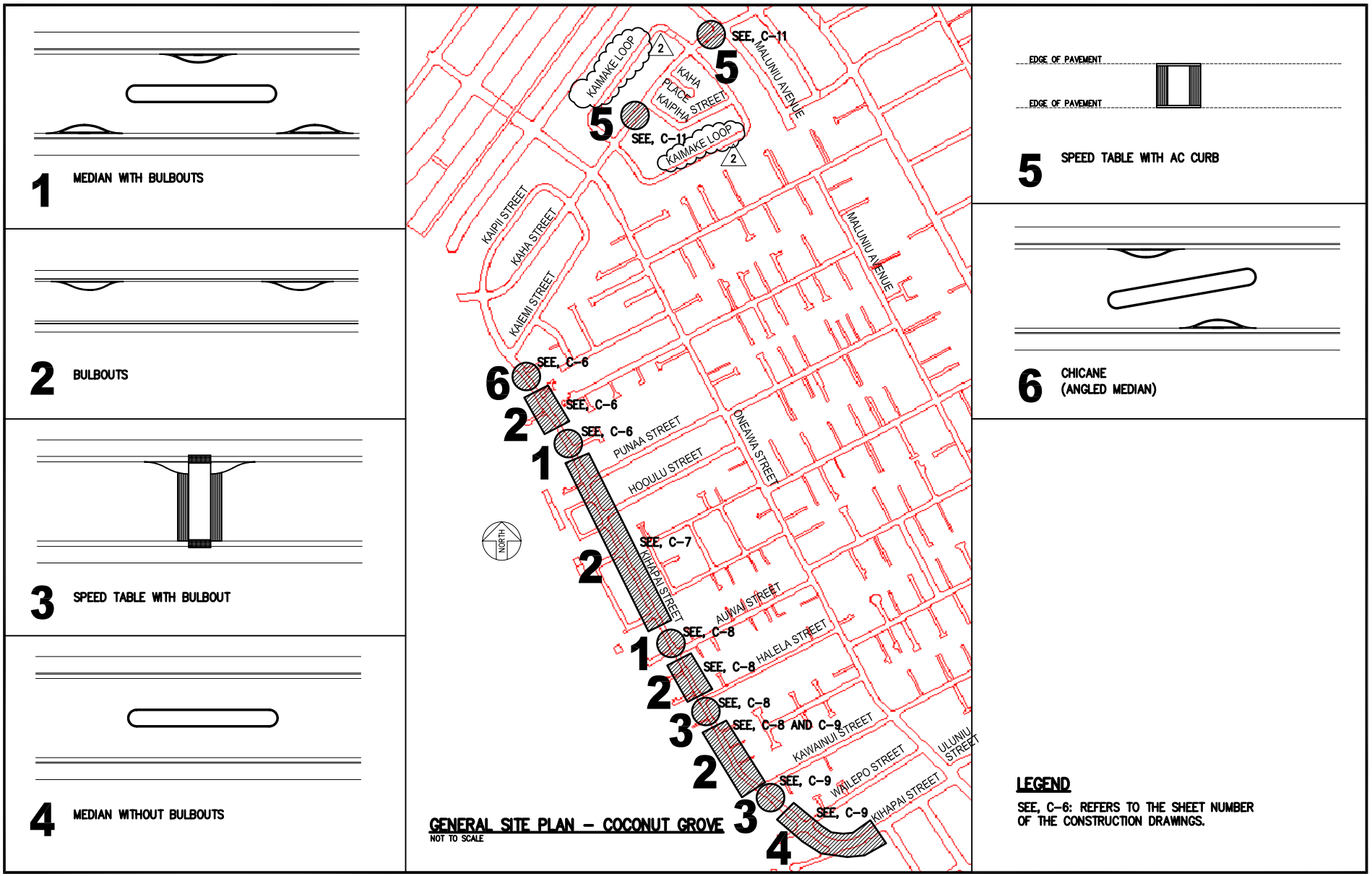
1. Add more striping and roadway reflectors at speed tables and medians.

2. Remove the chicane and replace it with a speed hump.

3. Monitor again in one year.

Attachments

Exhibit A



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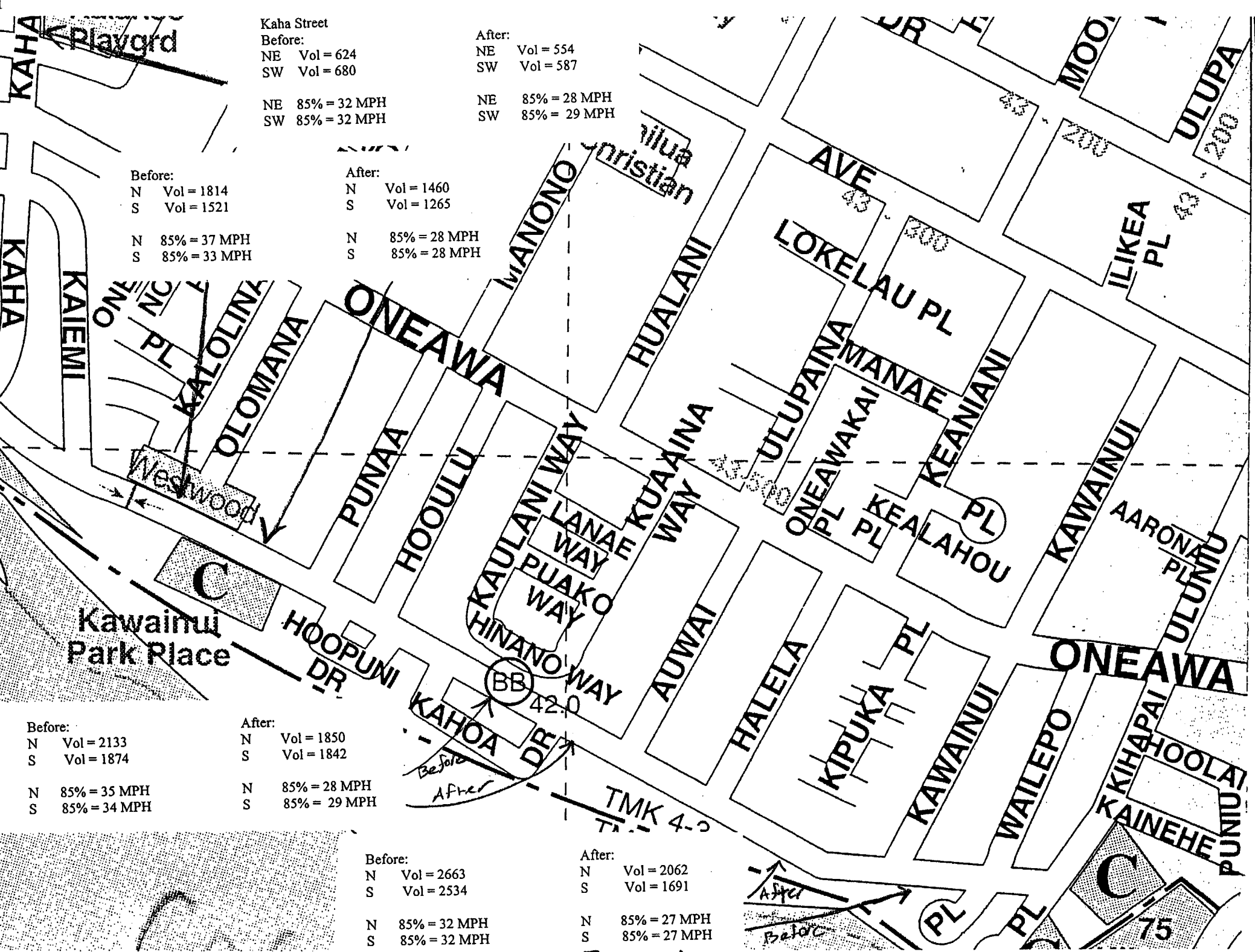
Kaha Street
Before:
NE Vol = 624
SW Vol = 680
NE 85% = 32 MPH
SW 85% = 32 MPH
After:
NE Vol = 554
SW Vol = 587
NE 85% = 28 MPH
SW 85% = 29 MPH
Before:
N Vol = 1814
S Vol = 1521
N 85% = 37 MPH
S 85% = 33 MPH
After:
N Vol = 1460
S Vol = 1265
N 85% = 28 MPH
S 85% = 28 MPH
Before:
N Vol = 2133
S Vol = 1874
N 85% = 35 MPH
S 85% = 34 MPH
After:
N Vol = 1850
S Vol = 1842
N 85% = 28 MPH
S 85% = 29 MPH
Before:
N Vol = 2663
S Vol = 2534
N 85% = 32 MPH
S 85% = 32 MPH
After:
N Vol = 2062
S Vol = 1691
N 85% = 27 MPH
S 85% = 27 MPH
Playgrd
KAHA
KAIEMI
KALOLINA
OLOMANA
ONEAWA
MANONO
HUALANI
LOKELAU PL
ILIKEA PL
AVE
ULUPA
MANAE
KEANIANI
ULUPAINA
ONEAWAKAI PL
KEALAHOU PL
KAWAINUI
AARONA PL
ULUNIU
PUNAA
HOOULU
KAULANI WAY
LANAE WAY
KUAAINA WAY
PUAKO WAY
HINANO WAY
AUWAI
HALELA
KIPUKA PL
WAILEPO
KIHAPAI
HOOLAI
KAINEHE
PUNIU
Westwood
Kawainui Park Place
HOOPUNI DR
KAHOA DR
BB
42.0
TMK 4-3
C
75

Figure 1

Kihapai Street Traffic Speed/Volume Analysis

VOLUME						SPEED (85%)				
				Change					Change	
Location		Before	After	Qty	%		Before	After	Qty	%
Kihapai at Kaipii	N	1814	1460	354	20%	N	37	28	9	24%
	S	1521	1265	256	17%	S	33	28	5	15%
Kihapai at Kahoa	N	2133	1850	283	13%	N	35	28	7	20%
	S	1874	1842	32	2%	S	34	29	5	15%
Kihapai at Kawainui	N	2663	2062	601	23%	N	32	27	5	16%
	S	2534	1691	843	33%	S	32	27	5	16%
Kaha Street	N	624	554	70	11%	N	32	28	4	13%
	S	680	587	93	14%	S	32	29	3	9%

TABLE 1

625 Surveys Mailed Out

	Survey Questions:	Yes	%	No	%	Left Blank	%	Didn't Return Survey	%
1	Can traffic calming features be seen by drivers?	130	21%	70	11%	16	3%	409	65%
2	Have you noticed less traffic than before?	65	10%	145	23%	6	1%	409	65%
3	Has noise from traffic decreased?	60	10%	147	24%	9	1%	409	65%
4	Do you feel the changes are safer for pedestrians?	61	10%	149	24%	6	1%	409	65%
5	Do you feel the changes are safer for bicyclists?	38	6%	168	27%	10	2%	409	65%
6	traffic calming features outweigh the inconvenience?	68	11%	135	22%	13	2%	409	65%
7	Do you have any comments or concerns about the project?	144	23%	72	12%	0	0%	409	65%

TABLE 2

ONLY 216 Surveys Returned

	Survey Questions:	Yes	%	No	%	Left Blank	%
1	Can traffic calming features be seen by drivers?	130	60%	70	32%	16	7%
2	Have you noticed less traffic than before?	65	30%	145	67%	6	3%
3	Has noise from traffic decreased?	60	28%	147	68%	9	4%
4	Do you feel the changes are safer for pedestrians?	61	28%	149	69%	6	3%
5	Do you feel the changes are safer for bicyclists?	38	18%	168	78%	10	5%
6	In general, do you believe the benefits of traffic calming features outweigh the inconvenience?	68	31%	135	63%	13	6%
7	Do you have any comments or concerns about the project?	144	67%	0	0%	72	33%

TABLE 3